

App. No. 09/927,096

Supplemental Amendment Dated: July 11, 2007

Reply to Office Action of March 22, 2007

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Listing of Claims:

1 (Currently amended): A computer-readable storage medium having computer-executable components, comprising:

a search engine manager having a client interface configured to allow the search engine manager to communicate with a client, a query generation module configured to receive a search query from the client interface and to generate a standard query, and a wrapper interface configured to provide the standard query to a search engine wrapper, wherein the search engine manager is configured to receive a search query from a client and to translate the search query to a standard query, wherein the standard query is universally formatted for a plurality of search engine wrappers registered with the search engine manager, and to communicate the standard query from the search engine manager to each of the plurality of search engine wrappers registered with the search engine manager; and

each of the search engine wrappers having a manager interface configured to provide standardized communication between the search engine wrapper and the search engine manager ~~search engine wrapper~~, a query translation module configured to translate the standard query received from the search engine manager into the native format query associated with the registered search engine, and a search engine interface configured to allow the search engine wrapper to communicate with the registered search engine in the native format of the registered search engine, wherein each of the search engine wrappers are configured to translates the standard query into a different native format, and to return results from the registered search engine to the search engine manager.

2-3 (Canceled):

4 (Previously presented): The computer-readable storage medium of claim 1, wherein the manager interface includes a COM (Component Object Model) interface.

5 (Previously presented): The computer-readable storage medium of claim 1, wherein the search engine interface includes a COM (Component Object Model) interface.

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6 (Cancelled)

7 (Previously presented): A computer-implemented method for communicating between a client and a plurality of search engines in a distributed processing system, comprising the steps of:

providing a search engine manager having a client interface configured to allow the search engine manager to communicate with the client, a query generation module configured to receive a search query from the client interface and to generate a standard query, and a wrapper interface configured to provide the standard query to a search engine wrapper;

providing a search engine wrapper having a manager interface configured to provide standardized communication between the search engine manager and the search engine wrapper, a query translation module configured to translate the standard query received from the search engine manager into the native format query associated with the registered search engine, and a search engine interface configured to allow the search engine wrapper to communicate with the registered search engine in the native format of the registered search engine;

receiving a search query, at a search engine manager, having a plurality of search parameters, the search query being generated by a search client;

building a standard query from the search query, wherein the standard query is universally configured to be understandable by a plurality of search engine wrappers;

issuing the standard query to each of the plurality of search engine wrappers;

receiving the standard query at each of the plurality of search engine wrappers;

at each of the plurality of search engine wrappers, translating the standard query to a native format query for a search engine associated with the search engine wrapper, wherein the native format query is unique to the search engine associated with the search engine wrapper; and

issuing, from each of the search engine wrappers, the unique native format query to the search engine associated with the search engine wrapper.

8 (original): The method of claim 7, wherein each search engine wrapper is configured to issue a progress update and a wrapper ID to the search engine manager.

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9 (original): The method of claim 7, wherein the search engine manager is configured to disable issuing the standard query to a selected search engine wrapper in accordance with the search query.

10 (original): The method of claim 7, wherein issuing the standard query to each of the plurality of search engine wrappers is facilitated by a standardized interface.

11 (original): The method of claim 10, wherein the standardized interface includes a COM (component object model) interface.

12 (original): The method of claim 11, wherein each of the plurality of search engine wrappers are registered with the search engine manager to provide searching capabilities.

13 (Currently amended): A computer-readable storage medium having computer-executable instructions for performing steps, comprising:

providing a search engine manager having a client interface configured to allow the search engine manager to communicate with the client, a query generation module configured to receive a search query from the client interface and to generate a standard query, and a wrapper interface configured to provide the standard query to a search engine wrapper;

providing a plurality of search engine wrappers having a manager interface configured to provide standardized communication between the search engine manager and the search engine wrappers, a query translation module configured to translate the standard query received from the search engine manager into the native format query associated with the registered search engine, and a search engine interface configured to allow the search engine wrappers to communicate with the registered search engine in the native format of the registered search engine;

registering a search engine with the search engine manager to provide searching capabilities;

receiving, at the search engine manager, a client query from a client;

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building a standard query from the client query received from the client, wherein the standard query is universally formatted for the search engine wrappers;

passing the standard query from the search engine manager to the plurality of search engine wrappers, wherein each of the plurality of search engine wrappers is associated with a different registered search engine;

translating, at each of the search engine wrappers, the standard query to a translated query in a native format of the registered search engine associated with the search engine wrapper, wherein each of the search engine wrappers translates the standard query into a different native format;

transmitting the translated query to the registered search engine; and

receiving results of the translated query from the registered search engine.

14 (Currently amended): The computer-readable storage medium of claim 13, wherein registering the search engine further comprises registering an associated search engine wrapper with a common registration service.

15 (Currently amended): The computer-readable storage medium of claim 14, wherein registering the associated search engine wrapper further comprises storing a wrapper ID which uniquely identifies the associated search engine wrapper, and storing other information, in a database associated with the common registration service.

16 (Currently amended): The computer-readable storage medium of claim 13, wherein passing the standard query from the search engine manager is performed through a standardized interface allowing for a multiplicity of search engine wrappers associated with other search engines to receive the standard query.

17 (Previously presented): The computer-readable storage medium of claim 15, wherein the standardized interface includes a COM (Component Object Model) interface.

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18 (Previously presented): The computer-readable storage medium of claim 13, wherein building the standard query further comprises combining, by a query generation module, the client query with other parameters received from the client.

19 (Previously presented): The computer-readable storage medium of claim 13, wherein translating the standard query further comprises transforming the standard query to the native format of the search engine through the use of a translation module.

20 (Previously presented): The computer-readable storage medium of claim 13, wherein receiving the results further comprises enumerating the results, returning the wrapper ID to the search engine manager, and returning progress updates to the manager until the results are returned.

21 (Previously presented): A computer-readable storage medium having computer-executable instructions for performing steps, comprising:

providing a search engine manager having a client interface configured to allow the search engine manager to communicate with the client, a query generation module configured to receive a search query from the client interface and to generate a standard query, and a wrapper interface configured to provide the standard query to a search engine wrapper;

providing at least one search engine wrapper having a manager interface configured to provide standardized communication between the search engine manager and the search engine wrapper, a query translation module configured to translate the standard query received from the search engine manager into the native format query associated with the registered search engine, and a search engine interface configured to allow the search engine wrapper to communicate with the registered search engine in the native format of the registered search engine;

discovering at least one search engine registered with a search system;

receiving a query initiated by a client accessing the search system;

building a standard query from the query initiated by the client, wherein the standard query is universally configured to be understandable by a plurality of engine wrappers;

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transmitting the standard query to a plurality of search engine wrappers, wherein each search engine wrapper is configured to translate the search query into a native format that is unique to a search engine registered with the search engine wrapper;

requesting a response from each of the search engine wrappers the response including a progress update for the standard query as it is executed and the results of the standard query; and receiving responses from each of the search engine wrappers.

22 (Previously presented): The computer-readable storage medium of claim 21, wherein discovering a search engine registered with the search system further comprises accessing a search engine store to retrieve identification information for the at least one search engine registered with the search system.

23 (Previously presented): The computer-readable storage medium of claim 21, wherein receiving the query initiated by a client further comprises receiving the query through a COM interface.

24 (Previously presented): The computer-readable storage medium of claim 21, wherein building the standard query further comprises using a query generation module.

25 (Previously presented): The computer-readable storage medium of claim 21, wherein transmitting the standard query further comprises not transmitting the standard query to a search engine wrapper that is excluded by the client.

26 (Previously presented): The computer-readable storage medium of claim 21, wherein the response received indicates that the standard query is complete.

27 (Previously presented): The computer-readable storage medium of claim 21, wherein the response received indicates that the standard query failed because a time limit for receiving a response is exceeded.

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28 (Previously presented): The computer-readable storage medium of claim 21, wherein the response indicates that the standard query is because the at least one search engine associated with the at least one search engine wrapper is not finished with its associated native format query.

29-36 (Cancelled):